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ADDITIONAL STENT EXPANSION WITH POST-DILATATION OF BALLOON EXPANDABLE TRANSCATHETER AORTIC VALVE

i2 Poster Contributions

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Session Title: Outcomes in Patients Treated with TAVR

Abstract Category: 20. PCI - Valvular Heart Disease

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Background: Paravalvular regurgitation (PVR) is common after transcatheter aortic valve replacement (TAVR) and significant PVR may be associated with adverse clinical outcomes. Post-dilatation (PD) is commonly used to treat PVR. The effect of PD on stent expansion in balloon-expandable TAVR is unknown.

Methods: Using fluoroscopy and the Paieon's C-THV system, the inflow (IF), outflow (OF) and minimal diameters of the stent were measured after deployment. Repeat measurements were done using the same method and same fluoroscopic projection after PD.

Results: From August 2008 to March 2011, 77 TAVR using Edwards SAPIEN transcatheter valves were done at our institution using the help of the Paieon's C-THV system. A 26 mm valve was used in 54 cases and a 23 mm valve in 23 cases. PD was performed in 24 cases (31%) adding 0.5 to 1 cc to the balloon and was more frequent with a 26 mm valve (37% vs. 17%, $P=0.088$). After initial deployment, stent diameters were similar between the PD and non-PD groups. There was a significant increase in the OF and minimal diameters after PD for both 23 and 26 mm valves and in the IF diameters for the 26 mm valves (see Table). There was a greater expansion in the IF and OF diameters compared to the minimal diameter.

Conclusion: In this small study, post-dilatation significantly increased the IF, OF and minimal diameters of the stent with a greater change in the OF and IF.

Table. Effect of post-dilatation on stent dimensions

	Pre- PD diameter (mm)	After PD diameter (mm)	Increase in diameter (mm) [95% CI]	P value
23 mm valve (n=4)				
Inflow	22.55 ± 0.37	22.78 ± 0.19	0.23 [-0.19;0.64]	0.19
Minimal	22.18 ± 0.78	22.43 ± 0.90	0.25 [0.04;0.46]	0.03
Outflow	23.40 ± 0.91	23.68 ± 0.83	0.28 [0.12;0.43]	0.01
26 mm valve (n=20)				
Inflow	24.74 ± 0.41	25.25 ± 0.51	0.51 [0.39;0.63]	<0.001
Minimal	24.60 ± 0.66	24.99 ± 0.70	0.39 [0.27;0.51]	<0.001
Outflow	25.37 ± 0.84	25.81 ± 0.79	0.45 [0.27;0.62]	<0.001